

Attorney's Docket No.: 06618-406001

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

7. (Currently Amended) A process for making a catalyst ink for a fuel cell, comprising mixing, at room temperature, components comprising water, particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, and a catalytic material including platinum and another material, which are randomly spaced and uniformly mixed.

8. The process of claim 7, wherein the particles have a surface area of about 5 to about 10 m²/g.

9. The process of claim 7, wherein the catalytic material comprises Pt.

10. The process of claim 7, wherein the fluorocarbon polymer is selected from the group consisting of polytetrafluoroethylene polymers and fluorinated ethylene-propylene polymers.

11. The process of claim 7, wherein the catalyst ink further comprises an ionomer.

Attorney's Docket No.: 06618-406001

12. The process of claim 11, wherein the ionomer comprises a liquid copolymer of tetrafluoroethylene and perfluorvinylethersulfonic acid.

13. (Currently Amended) A process for making an electrode assembly for a fuel cell, comprising:

(a) providing a catalyst ink comprising water, particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, and a catalytic material including platinum and another material, which are randomly spaced and uniformly mixed; and

(b) applying the catalyst ink at room temperature to at least one side of a substrate.

14. The process of claim 13, wherein the substrate is a membrane.

15. The process of claim 14, further comprising roughening the side of the membrane prior to applying the catalyst ink.

16. The process of claim 15, wherein the side of the membrane is roughened by contacting the membrane with an abrasive selected from the group consisting of silicon nitride, boron nitride, silicon carbide, silica and boron carbide.

Attorney's Docket No.: 06618-406001

17. The process of claim 16, wherein the abrasive has a grit size of about 300 to about 400.

18. (Currently Amended) A process for making a membrane electrode assembly for a fuel cell, comprising:

(a) providing a catalyst ink comprising particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, and a catalytic material including platinum and another material, randomly spaced and uniformly mixed;

(b) applying the catalyst ink at room temperature to at least one side of a membrane; and

(c) bonding the membrane to at least one electrode.

19. The process of claim 18, further comprising roughening the side of the membrane prior to applying the catalyst ink.

20. (Currently Amended) A fuel cell comprising a membrane electrode assembly, wherein the membrane electrode assembly is made by the process of:

a) providing a catalyst ink comprising particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, and a catalytic material including platinum and another material, which are randomly spaced and uniformly mixed;

Attorney's Docket No.: 06618-406001

(b) applying the catalyst ink at room temperature to at least one side of a membrane; and

(c) bonding the membrane to at least one electrode.

21. (New) A fuel cell as in claim 20, wherein said applying further comprises roughening said at least one side of the membrane prior to applying the catalyst ink.

22. (New) A process as in claim 18, wherein said applying comprises roughening said one surface prior to applying the catalyst ink.